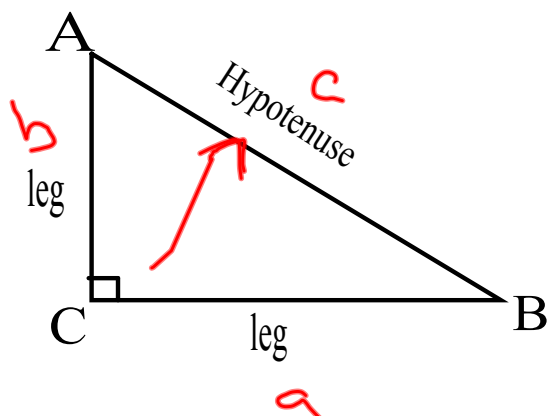


4.4 The Pythagorean Theorem and (The Distance Formula)

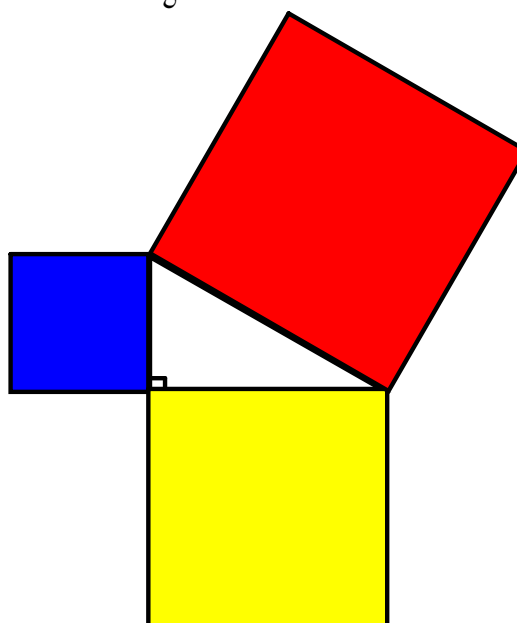


$$c^2 = a^2 + b^2$$

hypotenuse² = leg² + leg²

Nov 12-11:13 AM

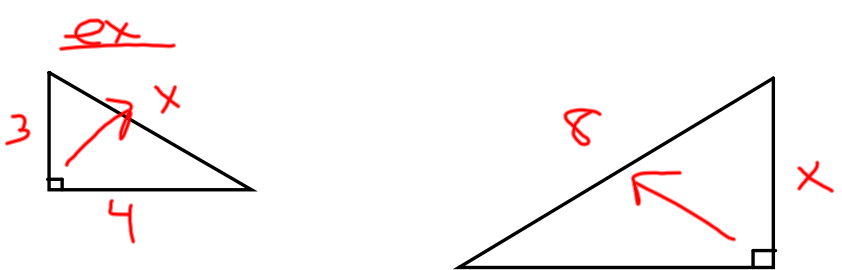
There are many proofs of the Pythagorean theorem. Including one written by President Garfield.



<http://www.pbs.org/wgbh/nova/proof/puzzle/theorem.html>

Nov 12-11:26 AM

ex



$$c^2 = a^2 + b^2$$

$$x^2 = 3^2 + 4^2$$

$$\sqrt{x^2} = \sqrt{9 + 16}$$

$$x = 5$$

$$8^2 = x^2 + 6^2$$

$$64 = x^2 + 36$$

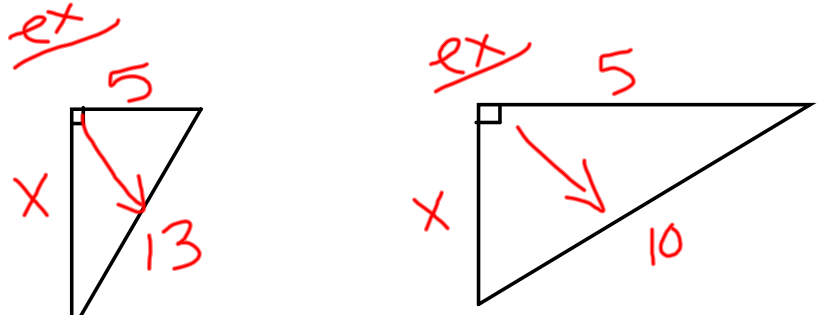
$$\begin{array}{r} 64 \\ -36 \\ \hline 28 \end{array} = x^2$$

$$\sqrt{28} = \sqrt{x^2}$$

$$2\sqrt{7} = x$$

Nov 12-11:29 AM

ex



$$13^2 = x^2 + 5^2$$

$$169 = x^2 + 25$$

$$\begin{array}{r} 169 \\ -25 \\ \hline 144 \end{array} = x^2$$

$$\sqrt{144} = \sqrt{x^2}$$

$$12 = x$$

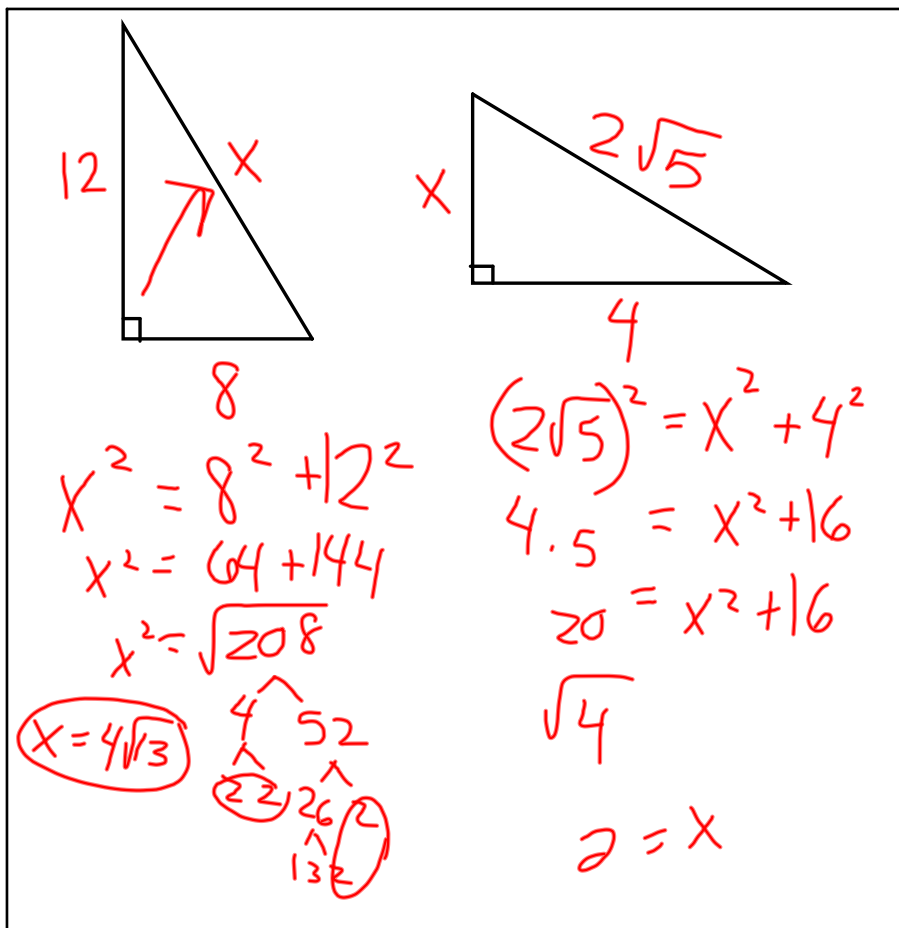
$$10^2 = x^2 + 5^2$$

$$100 = x^2 + 25$$

$$\sqrt{75} = \sqrt{x^2}$$

$$5\sqrt{3} = x$$

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$$x^2 = 8^2 + 12^2$$

$$x^2 = 64 + 144$$

$$x^2 = \sqrt{208}$$

$$x = 4\sqrt{13}$$

$$(2\sqrt{5})^2 = x^2 + 4^2$$

$$4 \cdot 5 = x^2 + 16$$

$$20 = x^2 + 16$$

$$\sqrt{4}$$

$$2 = x$$

Nov 12-11:29 AM

HW
 p195-197
 2-4, 8-22

Nov 12-11:43 AM

Attachments

Pythagoras.gsp